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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/20/2001

Richard B. Wheeler

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06/30/2005

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EXAMINER

HENN, TIMOTHY J

ART UNIT

PAPER NUMBER

2612

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/957,013

Applicant(s)

WHEELER ET AL.

Examiner

Timothy J Henn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/09/01, 3/14/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The examiner notes that the IDS filed on October 5, 2001 contains reference to US Patent No. 5,738,924 by Peter Sing entitled "Sandwich Construction Building Materials". This reference has not been considered since it is believed by the examiner to be a typographical error. Instead, the examiner has considered US Patent No. 5,739,924 by Homare Sano entitled "Photographed Image Printing Apparatus Capable of Correcting Image Quality" which is referenced on page 29, lines 9-13 of the specification. This reference has been included on the attached PTO-892 form.

Drawings

2. The drawings were received on January 14, 2002. These drawings are acceptable.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2-4, 6, 9, 10, 12, 13, 17, 19, 25, 30-33, 35, 36 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Sano (US 5,739,924).

[claim 1]

Regarding claim 1, Sano discloses a method for processing a captured image with one or more correction processes selected from a plurality of such processes, each associated with correction of specific types of image defect, in order to improve the appearance of a viewed image generated from the captured image, the method comprising the steps of: collecting metadata related to image capture that is unique to each image that is captured, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image generated from the captured image (c. 4, ll. 36-58); predicting the presence of the image defects based at least in part on the meta data, thereby generating processing application criteria which indicate a level of image defect that if left untreated would reduce the perceived quality of the viewed image (figure 3, step #3; c. 6, ll. 43-59); selecting one or more correction processes to employ on the captured image based on the process application criteria (figure 3; step #4; c. 6, ll. 43-59); and applying the one or more selected correction processes to the captured image to generate the viewed image (Figure 3; Item #5; c. 6, ll. 43-59).

[claim 2]

Regarding claim 2, Sano discloses metadata which includes scene, camera or demographic data related to the image capture (c. 4, ll. 36-58).

[claim 3]

Regarding claim 3, Sano discloses predicting the severity (i.e. existent or non-existent) of the image defect and alters the strength of the corresponding correction process in response to the degree of severity (i.e. applying the process if the defect exists or non applying the process if it is non-existent).

[claim 4]

Regarding claim 4, Sano discloses metadata which is collected at the time of image capture (c. 4, ll. 36-58).

[claim 6]

Regarding claim 6, Sano discloses an image defect which is a noise defect (i.e. an image having poor contrast can be said to be "noisy") and the metadata is exposure time and camera lens f-number (c. 8, ll. 40-56).

[claim 9]

Regarding claim 9, Sano discloses an image defect which is a sharpness defect (i.e. contrast) and the metadata is exposure time (c. 8, ll. 40-56).

[claim 10]

Regarding claim 10, Sano discloses collecting metadata related to display parameters of the viewed image, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image (c. 4, ll. 36-58; as broadly as claimed "brightness of a subject" can be read as being "related to display parameters" since the display of the viewed image would inherently change as the brightness of the subject is changed).

[claim 12]

Regarding claim 12, Sano discloses an image processing method incorporating a plurality of image defect location and correction processes, each associated with correction of a specific type of image defect, that are selectively and automatically applied to an image only when the image is predicted from specific capture variables associated with image capture to have a level of image defect, treatable by one or more of the processes that if left untreated would reduce the perceived quality of the final viewed image (figure 3; c. 4, ll. 36-58; c. 6, ll. 28-63).

[claim 13]

Regarding claim 13, Sano discloses image captured which is a film capture on a film capture device (e.g. c. 3, ll. 61-64) and wherein the capture variables include an exposure time (c. 4, ll. 36-58).

[claim 17]

Regarding claim 17, Sano discloses a method further comprising the steps of: recording at the time each image is captured, at least one image capture parameter known to indicate whether an image defect is likely to be present in the final viewed image (c. 4, ll. 36-58); storing and later transferring to a photofinishing control system at least one of the parameters (figure 3, step #1; c. 4, ll. 36-58; c. 6, ll. 28-39); employing in the photofinishing control system a means for predicting from at least one of the image capture parameters and current printing parameters, whether the image will have a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #3; c. 6, ll. 42-50); and applying to the image via automated techniques image defect location and correction means, when the prediction

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means indicates a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #4; c. 6, ll. 42-50).

[claim 19]

Claim 19 includes all the limitations of claim 17 with the addition of an image defect which is a noise defect. However, Sano discloses an image defect which is a noise defect (i.e. an image having poor contrast can be said to be "noisy"; c. 8, ll. 40-56). Therefore, claim 19 is rejected in the same manner as claim 17 above.

[claim 25]

Claim 25 includes all the limitations of claim 17 with the addition of an image defect which is a noise defect. However, Sano discloses an image defect which is a noise defect (i.e. contrast; c. 8, ll. 40-56). Therefore, claim 25 is rejected in the same manner as claim 17 above.

[claim 30]

Regarding claim 30, Sano discloses a system for processing a captured image with one or more correction processes selected from a plurality of such processes, each associated with correction of a specific type of image defect, in order to improve the appearance of a viewed image generated from the captured system (figure 1), the system comprising: a data recording stage for collecting and recording meta data related to image capture that is unique to each image that is captured, wherein the meta data is capable of indicating whether the specific types of image defects are likely to be present in the viewed image generated from the captured image (c. 4, ll. 36-58); a digital image processor for (a) predicting the present of the image defects based at

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least in part on the meta data, thereby generating process application criteria which indicate a level of image defect that if left untreated would reduce the perceived image quality of the viewed image (figure 3, step #3; c. 6, ll. 42-50) and (b) selecting one or more correction processes to employ on the captured image based on the process application criteria (figure 3, step #4; c. 6, ll. 42-50); and means for applying the one or more selected correction processes to the captured image to generate the viewed image (figure 3; step #5; c. 6, l. 42-50).

[claim 31]

Regarding claim 31, Sano discloses metadata which includes scene, camera or demographic data related to the image capture (c. 4, ll. 36-58).

[claim 32]

Regarding claim 32, Sano discloses predicting the severity (i.e. existent or non-existent) of the image defect and alters the strength of the corresponding correction process in response to the degree of severity (i.e. applying the process if the defect exists or non applying the process if it is non-existent).

[claim 33]

Regarding claim 33, Sano discloses metadata which is collected at the time of image capture (c. 4, ll. 36-58).

[claim 35]

Regarding claim 35, Sano discloses collecting metadata related to display parameters of the viewed image, wherein the metadata is capable of indicating whether the specific types of image defects are likely to be present in the viewed image (c. 4, ll.

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36-58; as broadly as claimed "brightness of a subject" can be read as being "related to display parameters" since the display of the viewed image would inherently change as the brightness of the subject is changed).

[claim 36]

Regarding claim 36; Sano discloses a system for processing a captured image with one or more correction processes selected from a plurality of such processes, each associated with correction of a specific type of image defect, in order to improve the appearance of a final viewed image generated from the captured image, the system comprising: an image capture device utilizing a camera control system to capture an image (figure 2; a camera is required in order to produce film including pictures as shown and described); a photofinishing system utilizing a photofinishing control system to produce the final viewed image (figure 1, item 5); means for recording at the image each image is captured at least one image capture parameter known to indicate whether an image defect is likely to be present in the final viewed image (c. 4, ll. 36-58); means for storing and alter transferring to the photofinishing control system at least one of the parameters (figure 3, step #1; c. 4, ll. 36-58; c. 6, ll. 28-39); means for employing in the photofinishing control system a means for predicting from at least one of the image capture parameters and current printing parameters, whether the captured image will have a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #3; c. 6, ll. 42-50); and means for applying to the captured image via automated techniques, image defect location and correction means, when the prediction means indicates a level that if left untreated would reduce

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the perceived quality of the final viewed image (figure 3; step #4; c. 6, ll. 42-50).

[claim 38]

Regarding claim 38, Sano discloses an image processing system incorporating a plurality of image defect location and correction processes, each associated with correction of a specific type of image defect, that are selectively and automatically applied to an image only when the image is predicted from the specific capture variables associated with image captured to have a level of image defect, treatable by one or more processes, that if left untreated would reduce the perceived quality of the final viewed image (figure 3; c. 4, ll. 36-58; c. 6, ll. 28-63).

5. Claims 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Schildkraut et al. (US 6,292,574).

[claim 27]

Regarding claim 27, Schildkraut discloses an image processing method incorporating an image defect location and correction process (i.e. redeye) that is applied to an image only when a demographic characteristic of the image (i.e. including skin color) is predicted to cause a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 2; abstract).

[claim 28]

Regarding claim 28, Schildkraut discloses an image defect which is a red-eye defect (abstract).

[claim 29]

Regarding claim 29, Schildkraut discloses a demographic characteristic which includes a race of a subject (i.e. skin color).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 5 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Shiota et al. (US 6,011,547).

[claims 5 and 34]

Regarding claims 5 and 34, Sano discloses all limitations except for collecting metadata at a time other than the time of image capture. However, Shiota discloses that image metadata can be automatically entered at time of capture or alternatively be entered by the camera user (c. 2, ll. 19-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to allow the user to later determine the metadata information as an alternative to automatically generating the metadata at the time of image capture as taught by Shiota.

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8. Claims 7, 18, 20-22, 24, 26 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Feldis, III (US 2003/0007078).

[claim 7]

Regarding claim 7, Sano discloses all limitations except for an image defect which is a redeye defect. However, Feldis, III discloses correcting redeye defects on the basis of whether or not a flash device was used during exposure (paragraph 0035). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform redeye correction as taught by Feldis, III to remove redeye from images when it is predicted to be present by the method of Sano.

[claim 18]

Regarding claim 18, Sano discloses recording at the time each image is captured, at least one image capture parameter known to indicate whether an image defect is likely to be present in the final viewed image (c. 4, ll. 36-58); employing in the photofinishing control system a means for predicting from at least one of the image capture parameters and current printing parameters, whether the image will have a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #3; c. 6, ll. 42-50); and applying to the image via automated techniques image defect location and correction means, when the prediction means indicates a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #4; c. 6, ll. 42-50). However, Sano does not disclose employing in a camera control system a means for predicting whether a level of image defect is present and transferring a value indicative of whether the image

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defect is predicted to be present and instead performs the determination in the photofinishing system.

Feldis, III discloses a camera which collects metadata, determines whether or not an image defect is likely to be present and adds a tag to the image if the defect is likely to be present (paragraph 0035). The image and tag are then transferred to a computer system where the image is processed according to the tag. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the determination of whether an image defect is present or not in the camera as taught by Feldis, III to lower the amount of data required to be transmitted to the photofinishing system by transmitting only a tag to instruct the photofinishing system to correct the image rather than transmitting all of the collected metadata.

[claim 20]

Claim 20 includes all the limitations of claim 18 with the addition of an image defect which is a noise defect. However, Sano discloses an image defect which is a noise defect (i.e. an image having poor contrast can be said to be "noisy"; c. 8, ll. 40-56). Therefore, claim 20 is rejected in the same manner as claim 18 above.

[claim 21]

Regarding claim 20, Sano discloses all limitations (see claim 17) except for an image defect which is a redeye defect. However, it is notoriously well known in the art to perform redeye correction based on collected metadata, for example see Feldis, III (paragraph 0035). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform redeye correction as taught by Feldis,

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III to remove redeye from images when it is predicted to be present by the method of Sano.

[claim 22]

Claim 22 includes all the limitations of claim 18 with the addition of an image defect which is a noise defect. However, Feldis, III discloses an image defect which is a redeye defect (paragraph 0035). Therefore, claim 22 is rejected in the same manner as claim 18 above.

[claim 24]

Claim 24 includes all the limitations of claim 18 with the addition of an image defect which is a noise defect. However, Feldis, III discloses an image defect which is a tonescale defect (as broadly as claimed, a "tonescale defect" can be read as a "redeye defect" since the tone of the eye area of the image is incorrect; paragraph 0035). Therefore, claim 24 is rejected in the same manner as claim 18 above.

[claim 26]

Claim 26 includes all the limitations of claim 18 with the addition of an image defect which is a noise defect. However, Sano discloses an image defect which is a noise defect (i.e. contrast; c. 8, ll. 40-56). Therefore, claim 26 is rejected in the same manner as claim 18 above.

[claim 37]

Regarding claim 37, Sano discloses a system for processing a captured image with one or more correction processes selected from a plurality of such processes, each associated with correction of a specific type of image defect, in order to improve the

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appearance of a final viewed image generated from the captured image, the system comprising: an image capture device utilizing a camera control system to capture an image (figure 2; a camera is required in order to produce film including pictures as shown and described); a photofinishing system utilizing a photofinishing control system to produce the final viewed image (figure 1, item 5); means for recording at the image each image is captured at least one image capture parameter known to indicate whether an image defect is likely to be present in the final viewed image (c. 4, ll. 36-58); means for storing and alter transferring to the photofinishing control system at least one of the parameters (figure 3, step #1; c. 4, ll. 36-58; c. 6, ll. 28-39); means for employing in the photofinishing control system a means for predicting from at least one of the image capture parameters and current printing parameters, whether the captured image will have a level of image defect that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #3; c. 6, ll. 42-50); and means for applying to the captured image via automated techniques, image defect location and correction means, when the prediction means indicates a level that if left untreated would reduce the perceived quality of the final viewed image (figure 3; step #4; c. 6, ll. 42-50).

However, Sano does not disclose employing in a camera control system a means for predicting whether a level of image defect is present and transferring a value indicative of whether the image defect is predicted to be present and instead performs the determination in the photofinishing system.

Feldis, III discloses a camera which collects metadata, determines whether or not an image defect is likely to be present and adds a tag to the image if the defect is likely

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to be present (paragraph 0035). The image and tag are then transferred to a computer system where the image is processed according to the tag. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the determination of whether an image defect is present or not in the camera as taught by Feldis, III to lower the amount of data required to be transmitted to the photofinishing system by transmitting only a tag to instruct the photofinishing system to correct the image rather than transmitting all of the collected metadata.

9. Claims 8 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924) in view of Silverbrook (US 6,727,951).

[claim 8]

Regarding claim 8, Sano discloses all limitations except for an image defect which is a tonescale defect. However, Silverbrook discloses correcting tonescale defects based on a determined light level (i.e. "respective illumination levels of the subject and background"; c. 2, l. 25 - c. 3, l. 13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform tonescale correction as taught by Feldis, III to create images with colors that are stronger, deeper and richer.

[claim 23]

Regarding claim 23, Sano discloses all limitations (see claim 17) except for an image defect which is a tonescale defect. However, it is notoriously well known in the art to perform redeye correction based on collected metadata, for example see

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Silverbrook (c. 2, l. 25 - c. 3, l. 13) Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform tonescale correction as taught by Feldis, III to create images with colors that are stronger, deeper and richer.

10. Claims 11 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sano (US 5,739,924).

[claim 11]

Regarding claim 11, Sano discloses all limitations (see claim 1) except for instructions stored in a storage medium for causing a computer to perform the claimed steps. Official Notice is taken that it is notoriously well known in the art to perform image analysis and processing methods in computers using software or instruction stored in a computer storage medium. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the steps of Sano in a computer through the use of software to allow the software component to take advantage of the processing power of easily available off the shelf computer processors and systems to implement the method of Sano.

[claim 14]

Regarding claim 14, Sano discloses all limitations (see claims 1 and 13) except for an image capture which is an electronic capture. Official Notice is taken that it is notoriously well known to capture and process images using electronic capture devices such as digital cameras or digital scanners to create images without the need for

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expensive film development steps. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the method of Sano using a digital camera or digital scanner to avoid expensive film development steps in the creation of images.

[claims 15 and 16]

Regarding claims 15 and 16, see claim 14.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following further shows the current state of the art in image processing:

- | | | |
|------|------------------|-----------------|
| i. | Keelan et al. | US 2003/0025811 |
| ii. | Benati et al. | US 5,432,863 |
| iii. | Terashita et al. | US 5,404,196 |

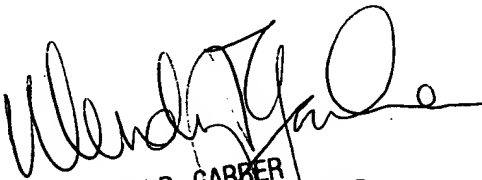
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy R. Garber can be reached on (571) 272-7308. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJH
6/16/05



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